REMARKS

By amendment herein, claims 3, 5-13 and 19 have been canceled. Claim 1 has been amended to more specifically identify the fragment of *S. enteritidis* fimbrial protein referred to therein. Support for these amendments can be found, for example, in original claim 18. Claim 18 has been amended to make more clear that the maximum size of the fragment claimed is defined by the phrase "consisting of." Applicants believe that this was clear from the original language, but in view of the examiner's comment on page 2 of the Action, the claim has been amended to make this point more explicit. New claims 35 and 36 find support in original claims 27, 28 and 31.

Claim 18 has been rejected under 35 U.S.C. § 102(b) as anticipated by Muller et al., *J. Bacteriology* 173(15):4765-4772 (1991). The examiner asserted that Muller et al. disclose an isolated fragment of an *S. enteritidis* fimbrial protein comprising a fragment of SEQ ID NO:3. This rejection is traversed.

The 36 amino acid fragment referenced by the examiner in Table 1 of the Muller et al. reference does not fall within the amino acid sequence of the fragment identified in the present application as SEQ ID NO:3. The sequence in Table 1 begins at amino acid number 22 and ends at amino acid number 57. In

contrast, the fragment identified as SEQ ID NO:3 begins at amino acid number 38 and ends at amino acid number 165. Muller et al. do not teach or suggest such a fragment, and thus this reference does not anticipate the claimed sequence.

Claim 18 also was rejected under 35 U.S.C.§102(b) as anticipated by Ogunniyi et al., *Infection and Immunity* 62(12):5376-5383 (1994). The examiner asserted that the authors disclose three isolated fragments in Table 1 of an *S. enteritidis* fimbrial protein, the fragments comprising fragments of the sequence identified in the present application as SEQ ID NO:3. This rejection is traversed.

The three sequences set forth in Table 1 of the Ogunniyi et al. reference all extend from amino acid number 22 through amino acid number 51 of the *S. enteritidis* fimbrial protein. The three fragments differ from one another at two specific sites within the sequence (amino acids 30 and 48). As noted in the discussion regarding the preceding reference directly above, the fragment identified as SEQ ID NO:3 begins at amino acid number 38 and ends at amino acid number 165. Ogunniyi et al. do not teach or suggest such a fragment, and thus this reference does not anticipate the claimed sequence.

Claims 1-6 and 14-18 have been rejected under 35 U.S.C. §102(b) as anticipated by Rajashekara et al., WO98/03656. The

examiner asserted that this reference discloses the presently claimed method of detecting *S. enteritidis*. The examiner further asserted that the reference discloses using a sequence having 100% sequence identity with SEQ ID NO:2 and is a fragment of SEQ ID NO:2. This rejection is traversed.

As previously has been noted, the claims of the present application have been amended such that all claims now focus on the fimbrial protein fragment identified in the application as SEQ ID NO:3. In contrast, the antigenic fragment disclosed and used in Example 6 of the reference, specifically noted by the examiner, is larger than the fragment identified by SEQ ID NO:3 of the present application. The fragment in the reference contains amino acids 2-165. In contrast, SEQ ID NO:3 contains amino acids 38-165, and there is no teaching or suggestion in the reference of this fragment. As the reference teaches only a larger antigenic fragment and its use in detecting *S. enteritidis*, the reference does not anticipate or render obvious the presently claimed invention.

Claims 1, 3 and 14-17 have been rejected under 35 U.S.C. §012(b) as anticipated by U.S. Patent 5,510,241, issued to Thorns. The examiner asserted that the reference discloses the claimed method of detecting *S. enteritidis*. This rejection is traversed.

The '241 patent is directed to a method for testing for the presence of *S. enteritidis* and *S. dublin*. The patent discloses in column 11 the full length sequence for the *S. enteritidis* fimbrial antigen (SEFA) and states that fragments of the sequence will be "similarly specifically antigenic." As an initial point, it is noted that the statement in the patent that the full-length fimbrial antigen does not cross-react with *S. spp.* other than *S. dublin* is at odds with the present inventors' findings that the full-length antigen does show additional cross-reactivity (e.g., page 8 of the present application) and that certain fragments of that full sequence do as well. Even if one were to accept this statement in the reference, the clear implication of Thorns' teachings is that fragments of the fimbrial antigen would show reactivity to *S. dublin* as well as to S. *enteritidis*. In contrast to this, Applicants have identified an antigenic fragment of the fimbrial antigen that is active only against *S. enteritidis*. There is no teaching or suggestion of this specific fragment which is the focus of the claims as amended of the present application. Thorns does not disclose or suggest a fragment consisting of amino acids 38-165 of the fimbrial antigen, much less the use of such an antigen to detect *S. enteritidis* in a biological poultry sample, while discriminating between *S. enteritidis* and other *Salmonella spp.*--including *S.*

dublin. The reference thus does not anticipate the pending claims.

Claims 1-2 and 7-13 have been rejected under 35 U.S.C. §102(b) an anticipated by van Asten et al., *J. Bacteriology* 177(6):1610-1613 (1995). As in previous rejections, the examiner asserted that the reference discloses the claimed method for detecting *S. enteritidis* in a biological sample. The reference focuses on fragments of the flagellin protein of *S. enteritidis* and their use in methods of detecting *S. enteritidis* in a biological sample. This rejection is traversed.

All of the pending claims of the present application focus on and require a specific fimbrial antigen of *S. enteritidis* and the use of that antigen to specifically detect the presence of the strain of Salmonella in a biological sample. As this reference focuses on fragments of the flagellin antigen, and does not address the fimbrial antigen, the teachings of this reference are not relevant to the pending claims.

In view of the foregoing amendments and discussion, Applicants respectfully submit that the claims pending in this application are in condition for allowance.

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